Amendments to the Claims

Please amend the claims without prejudice. The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

[c1]   (Original) A method of evaluating changes for a wellbore interval, comprising:

obtaining first log data acquired by a logging sensor (8, 5, 6, 3) during a first pass over the wellbore interval;

obtaining second log data at a time later than the first log data, said second log data being acquired by the logging sensor during a second pass over the wellbore interval;

calculating a plurality of delta values between the first log data and the second log data;

deriving an observed effect using the plurality of the delta values; and

identifying a correlation between the observed effect and a causal event.

[c2]   (Original) The method of claim 1, further comprising displaying the correlation on a display device (82).

[c3]   (Currently amended) The method ~~of any~~ of claims 1-2, wherein the logging sensor measures at least one parameter selected from the group consisting of gamma ray, resistivity, neutron porosity, density, ultrasonic caliper, and sigma.

[c4]   (Currently amended) The method ~~of any~~ of claims 1-3, wherein the logging sensor is disposed on an integrated measurement tool.

[c5]   (Currently amended) The method ~~of any~~ of claims 1-4, wherein the correlation is a depth correlation.

[c6] (Currently amended) The method ~~of any~~ of claims 1-~~5~~, wherein the correlation is a time correlation.

[c7] (Original) The method of claim 1, further comprising:

calculating a relative effect using a sensitivity factor to adjust the correlation; and

displaying the correlation and the relative effect on a display device (82).

[c8] (Original) A system for evaluating changes for a wellbore interval comprising:

a well log data acquisition system (7) for acquiring first log data and second log data, at a time later than said first log data, from a logging sensor (8, 5, 6, 3) during a plurality of passes over the wellbore interval; and

a well log data processing system (72,74, 76) for:

calculating a plurality of delta values between the first log data and the second log data;

deriving an observed effect using the plurality of the delta values; and

identifying a correlation between the observed effect and a causal event.

[c9] (Original) The system of claim 8, further comprising a display device (82) for displaying the correlation.

[c10] (Currently amended) The system of ~~any of~~ claims 8-~~9~~, wherein the logging sensor measures at least one parameter selected from the group consisting of gamma ray, resistivity, neutron porosity, density, ultrasonic caliper, and sigma.

[c11] (Currently amended) The system of ~~any of~~ claims 8-~~10~~, wherein the logging sensor is disposed on an integrated measurement tool.

[c12] (Currently amended) The system of ~~any of~~ claims 8-~~11~~, wherein the correlation is a depth correlation.

[c13] (Currently amended) The system of ~~any of~~ claims 8-~~12~~, wherein the correlation is a time correlation.

[c14] (Original) The system of claim 8, further comprising a well log data processing system (72, 74, 76) for calculating a relative effect using a sensitivity factor to adjust the correlation; and displaying the correlation and the relative effect on a display device.

[c15] (Original) A computer system for evaluating changes for a wellbore interval, comprising:

a processor (72);

a memory (74);

a storage device (76);

a computer display (82); and

software instructions stored in the memory for enabling the computer system under control of the processor, to perform:

> gathering first log data from a logging sensor during a first pass over the wellbore interval;
>
> gathering second log data, at a time later than said first log data, from the logging sensor during a second pass over the wellbore interval;
>
> calculating a plurality of delta values between the first log data and the second log data;
>
> deriving an observed effect using the plurality of the delta values;
>
> identifying a correlation between the observed effect and a causal event; and
>
> displaying the correlation on the computer display.